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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,455	03/06/2002	Sol P. DiJaili	21153-6421	8758

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EXAMINER

NGUYEN, TUAN N

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/092,455

Applicant(s)

DIJAILI ET AL. 

Examiner

Tuan N Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.



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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/6/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: .

## DETAILED ACTION

### *Drawings*

1. New corrected drawings are required in this application because it is not acceptable to the draftsman, see the attached Notice of Draftsman drawing review. In addition, it is not clear to the examiner what the invention look like when the claim 19 reciting "the lasing SOA and the detector integrated on the same substrate;" there was no drawing clarifying this part of the invention .

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-36 are rejected under 35 U.S.C 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, **for example**.

Claims 1, and 18 recite a lasing semiconductor optical amplifier (SOA) apparatus comprising "*a detector positioned approximately the lasing SOA; and a power monitor coupled to the detector, for analyzing the electrical signal and determining a power level of the optical signal*". It is vague and indefinite as to the detector positioned with respect to the lasing SOA. Is it a independent/separate structure in relation with the semiconductor or is it a single integrate semiconductor structure as disclosed in claims 3 and 19 "laser cavity comprising: a top mirror,

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bottom mirror, and active region between the mirrors” and “where SOA and detector integrate on the same substrate”. These are two different system or inventions (that can be placed on restriction – applicant can apply one invention per application). The claims are broad, vague and indefinite, as to the function and relation of the “the detector” feedback. There is insufficient structure and relationship, which render the claims vague and indefinite. Claims 2-17, 19-23 rejected based on the same reason.

Claim 24 recites “a method for controlling an output power on an lasing SOA, comprising the step of: amplifying an optical signal ...; output a laser signal from SOA...; *detecting the signal; and monitoring the power of amplified optical signal...*”. There is no means of performing the detecting and monitoring the optical signal, which render the claims vague and indefinite. Claims 25-36 rejected based on the same reason.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 7, 9, 11, 13, 23-26, 32 are rejected under 35 U.S.C. 102(b) as being unpatentable Ouchi et al. (US 5659560).

With respect to claims 1, 2, 7, 24 Ouchi et al. '560 shows in (figures: 9,11,14,16,18,19,21,23,24,27,28,30,34,46) a lasing semiconductor optical amplifier apparatus comprising: an SOA, a detector near output convert optical output to electrical signal, and a

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power monitor coupled to detector to analyze the electrical signal and determining a power level of the optical signal (Fig 46: 2701, 2702, 2703, 2704) (Fig 9: 110,109, 3,8,5,6). Since claim 24 recites the same or identical elements/limitations it is inherent to use patents Ouchi '560 to recite the method of controlling output power on lasing SOA, product by process.

With respect to claims 3, 11,13, 23, 25, 26, 32 Ouchi '560 shows in (figures 9: 5,6, 8; Fig 14: 224, 216; Fig 16: 305-311; Fig 18: 411-413) the power monitor comprise a comparator and a pump source coupled to power monitor and lasing SOA that pumps gain medium in response to the power monitor. (Fig: 9:110, 109, 5-6; Fig 11A; Fig 14: 201-212, 216-217; Fig 19: 501-520; Fig 21: 701-716; Fig: 34) shows the SOA with active region between top and bottom mirror, and pump source coupled to active region.

6. Claims 1, 2, 7, 11, 24, 25, 32 are rejected under 35 U.S.C. 102(b) as being unpatentable Endoh et al. (US 5754571).

With respect to claims 1,2, 7, 24 Endoh et al. '571 shows in (figures 1, 5, 6, 9-14) a lasing semiconductor optical amplifier apparatus comprising: an SOA, a detector near output convert optical output to electrical signal, and a power monitor coupled to detector to analyze the electrical signal and determining a power level of the optical signal (Fig 1: 11, 15, 20, 22, 21, 23) ( Fig 5,6, 9-14). Since claim 24 recites the same or identical elements/limitations it is inherent to use patents Endoh '571 to recite the method of controlling output power on lasing SOA, product by process.

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With respect to claims 11, 25, 32 Endoh '571 shows in (figure 1: 22; Fig 6, 9, 10) the power monitor. It inherent that the power monitor has a comparator for comparing signal output and make correction in its feedback. Endoh's also shows a pump source coupled to power monitor and lasing SOA that pumps gain medium in response to the power monitor (Fig 6, 9, 10: 11, 81, 22, 82, S, Ps).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

8. Claim 4-6, 8-10, 12, 15-19, 20-22, 27-31, 33-36 are rejected under 35 U.S.C. 103 (a) as being unpatentable Ouchi et al. (US 5659560).

With respect to claim 18, Ouchi et al. '560 shows in (figures: 9, 11, 1416, 18, 19, 21, 23, 24, 27, 28, 30, 34, 46) a lasing semiconductor optical amplifier apparatus comprising: an SOA, a

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detector convert optical output to electrical signal, and a power monitor coupled to detector to analyze the electrical signal and determining a power level of the optical signal Ouchi's (Fig 46: 2701, 2702, 2703, 2704) (Fig 9: 110,109, 3,8,5,6). While Ouchi'560 '571 did not disclose a plurality of lasing SOA for amplifying at least one optical signal. It would have been obvious to one of ordinary skill in the art have multiple lasing SOA for amplifying at least one optical signal, to increase power output. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With respect to claims 4-6, 27-29, Ouchi '560 (figures: 9,11,14,16,18,19,21,23,24,27,28,30,34,46) shows the laser cavity is oriented vertically, horizontally, and transversely with respect to an amplification path of the optical signal.

With respect to claim 12, Ouchi '560 shows in (Fig 9:8; Fig 13, 15) the comparator as schmith trigger.

With respect to claims 9-10, 20-21, 30-31, (Fig 9: 3; Fig 14: 221). It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claims 15-17, 33-35 Ouchi '560 shows in (figures 46: 2702; Figure 9, 14) the optical fiber connecting between the system elements. It is within the skill of one in the art to

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use the optical fiber as a coupling buffer between multiple SOA for delay and store the optical signal for further amplifying the signal.

With respect to claims 8 and 19, it has been held that rearranging parts of an invention involves only routine skill in the art, in this case having detector on the same substrate. *In re Japikse*, 86 USPQ 70.

With respect to claim 22 Ouchi '560 shows in (figures 9: 5,6, 8; Fig 14: 224, 216; Fig 16: 305-311; Fig 18: 411-413) the power monitor comprise a comparator and a pump source coupled to power monitor and lasing SOA that pumps gain medium in response to the power monitor.

With respect to claims 36 Ouchi '560 shows in (figures 9: 5,6, 8; Fig 14: 224, 216; Fig 16: 305-311; Fig 18: 411-413) the power monitor comprise a comparator and a pump source coupled to power monitor and lasing SOA that pumps gain medium in response to the power monitor. It is within one skill in the art to consider the feedback controller is equivalent to adjustable control source.

9. Claim 4-6, 18, 27-29, 36 are rejected under 35 U.S.C. 103 (a) as being unpatentable Endoh et al. (US 5754571).

With respect to claim 18, Endoh et al. '571 shows in (figures 1, 5, 6, 9-14) a lasing semiconductor optical amplifier apparatus comprising: an SOA, a detector convert optical output to electrical signal, and a power monitor coupled to detector to analyze the electrical signal and determining a power level of the optical signal Endoh's (Fig 1: 11, 15, 20, 22, 21, 23) ( Fig 5,6, 9-14). While Endoh '571 did not disclose a plurality of lasing SOA for amplifying at least one



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optical signal. It would have been obvious to one of ordinary skill in the art have multiple lasing SOA for amplifying at least one optical signal, to increase power output. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With respect to claims 4-6, 27-29, Endoh '571 (figures 1, 5, 6, 9-14) shows the laser cavity is oriented vertically, horizontally, and transversely with respect to an amplification path of the optical signal.

With respect to claims 36 Endoh' 571 shows in (figure 14: 81) the tunable pump source wavelength.

***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



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Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a long, sweeping horizontal stroke extending to the right.